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REMARKS

Applicant wishes to thank the Examiner for the detailed remarks. Claims 1-10 have been canceled in response to a restriction requirement. New claims 20-36 are presented. Accordingly, claims 11-36 are pending.

Claims 11-19 were rejected under 35 U.S.C. §102(e) as being anticipated by *2004/0194627* to *Huang*. *2004/0194627* to *Huang* claims a filing date of September 8, 2003. Applicant submits herewith a declaration pursuant to 37 CFR §1.131 evidencing that the claimed invention was conceived prior to September 8, 2003, which is the effective 102(e) date for *2004/0194627* to *Huang*. Accordingly, the *2004/0194627* to *Huang* reference does not qualify as prior art.

Claims 11-17 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Coffinberry (4020632)* in view of either *Sauer (6604558)* or *Spadaccini (6315815)* and optionally in view of *Mullin (4879052)*. Applicant respectfully traverses these rejections as there is absolutely no teaching, suggestion, or motivation to modify *Coffinberry* by the cited references as proposed. The Examiner admits that *Coffinberry* does not teach that the fuel is deoxygenated. The Examiner then suggests that *Sauer* teaches using deoxygenated fuel for safety concerns. Initially, *Sauer* is an AIRCRAFT FUEL INERTING SYSTEM FOR AN AIRPORT. The abstract of *Sauer* specifically states: "[a] multi component, ***ground based system*** for reducing the hazard of explosion of aircraft fuel in the onboard tanks of aircraft."

"In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). *Saiuer* is classified in classification 141, FLUENT MATERIAL HANDLING WITH RECEIVER OR RECEIVER COACTING MEANS, specifically subclass 98 COMBINED. This subclass is indented under the class definition which specifically denotes that "[e]ach part therefore must comprise an entity capable of use independent of the other, and together the parts provide a flow path from a source or dispenser to a terminal part or receiver, thereby comprising a ***filling system***" (emphasis added). Such classification is wholly unrelated to the present invention which is simply not a filling

system. This classification suggests that this reference is non-analogous art. Moreover, *Sauer* is not in Applicant's field of endeavor and is not reasonably pertinent to the particular problem that the Applicant has solved. One would never look to the field of ground based aircraft fuel inerting filling systems for an airport to provide a method of thermal management for a gas turbine engine. The actual filling of an aircraft fuel tank from a ground based fuel system at an airport is performed with effectively no space or weight constraints while space and weight constraints are of primary concern in the thermal management of a fuel flow and oil flow of a gas turbine engine system. That is, a primary difficulty associated with thermal management of a gas turbine engine is that such management must take place within exceedingly restrictive space and weight constraints typical of an aircraft environment. *Sauer* is non-analogous art.

Even if *Sauer* is considered analogous art, there is absolutely no teaching, suggestion, or motivation to modify *Coffinberry* in view of *Sauer* as proposed. As described above, *Sauer* requires significant ground based infrastructure such as bulk storage tanks, a liquid nitrogen storage vessel and an onsite high purity nitrogen enriched air generator system to deoxygenate fuel prior to the supply of fuel to the aircraft. Such significant ground based infrastructure is simply inapplicable to a thermal management system for a gas turbine engine as such thermal management necessarily occurs onboard the gas turbine engine powered vehicle. In other words, there is no motivation to combine a ground based filling system which fills an aircraft fuel tank with the thermal management of a fuel system for the gas turbine engine. The claims are properly allowable for this reason alone.

The Examiner states that "as for the oil being effective above 325°F., it is not clear whether the oil will still be effective at these temperatures. However, high temperature oil is old and well known in the art, as taught by *Mullin* even in the context of gas turbine engines (Col. 2, lines 9+) and as admitted as being commercially available as including Niko Paris GTO 7." This misses the point. The only reason Applicant can even use oil which operates at temperatures above 325°F. is because of the fuel deoxygenation system which permits the fuel to remain stable at much higher temperatures such that higher temperature loads can reject their heat to fuel which is above 325°F. The optimized high temperature ester based oil and the deoxygenated fuel permits components which operate above the conventional 325°F. temperature limit to still reject heat to the fuel thereby providing advantageous thermal management. None of the references

alone or in combination discloses, suggests, or teaches such a thermal management system which permits thermal management of components which operate above the conventional 325°F. temperature limit.

Notably, although *Spadaccini* teaches fuel deoxygenation, *Spadaccini* does not disclose or suggest the usage of a high temperature oil in combination therewith. The Examiner is forced to rely on the supposition that:

> it would have been obvious to one of ordinary skill in the art to allow the fuel to exceed this temperature due to the enhanced anti-coking properties of the deoxygenated fuel;
>
> it would have been obvious to one of ordinary skill in the art to employ deoxygenated fuel for a safety concern and/or to prevent fuel coking and allow the temperature of the fuel to reach higher temperatures; and
>
> it would have been obvious to one of ordinary skill in the art to employ a high temperature oil for enhanced thermal protection and/or to prevent oil breakdown.

Of course, the Examiner does not cite to any prior art. These suppositions cannot be sustained individually – let alone in combination - and the claims are properly allowable.

As discussed above, none of the cited references support the Examiner's suppositions. It is axiomatic that an obviousness rejection must come from the suggestion or teachings of the references themselves. The only motivation to make the combination of such numerous references is by following the knowledge disclosed within the present invention. This is impermissible usage of hindsight in an attempt to re-create Applicant's device. It is also noted that the Examiner is utilizing a relatively significant number of references in this rejection. Although not dispositive, such numerous references further suggests that the Examiner is combining the multiple of references piecemeal utilizing Applicant's device as a blueprint. This still further supports Applicant's contention that the Examiner is improperly utilizing hindsight. Accordingly, the claims are properly allowable.

Claim 17 stands rejected under 35 USC §103(a) as being unpatentable over *Coffinberry* (4,020,632) in view of either *Sauer* (6,604,558) or *Spadaccini et al.* (6,315,815) and optionally in view of *Mullin* (4,879,052), as applied above, and further in view of *Niggemann et al.* (6,182,435). Applicant believes that this rejection is actually a rejection of claim 18 as claim 17 does not recite a fuel pump as mentioned in the rejection. Claim 18 recites that deoxygenated

fuel is communicated through a fuel pump after said step (2). Applicant is thereby treating this rejection as a rejection of claim 18, rather than claim 17. Nonetheless, the Examiner's need to utilize yet another reference to support the rejection further substantiates Applicant's contention of hindsight reasoning. Claim 18 is therefore allowable for at least the reasons discussed above.

New claims 20-36 recite further features of the present invention which are neither disclosed nor suggested by the cited references and are thus properly allowable. Notably, none of the cited references disclose or suggest: communicating the fuel through a first liquid-to-liquid heat exchanger system in communication with a first oil loop operable at a first maximum temperature; and then communicating deoxygenated fuel through a second liquid-to-liquid heat exchanger system at a second maximum temperature greater than the first maximum temperature.

Please charge $250 to Deposit Account No. 50-1482, in the name of Carlson, Gaskey & Olds, for 5 claims in excess of 20. If any additional fees or extensions of time are required, please charge to Deposit Account No. 50-1482.

Applicant respectfully submits that this case is in condition for allowance. If the Examiner believes that a telecconference will facilitate moving this case forward to being issued, Applicant's representative can be contacted at the number indicated below.

Respectfully Submitted,

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